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(to be used for all correspondence after initial filing)

Application Number	09/972,469
Filing Date	October 5, 2001
First Named Inventor	Fang LAI et al.
Group Art Unit	1631
Examiner Name	Carolyn L. SMITH
Total Number of Pages in This Submission	
Attorney Docket Number	015275

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ■ Amendment / Reply
  - ● REPLY TO OFFICIAL COMMUNICATION CONCERNING NON-RESPONSIVE RESPONSE
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Declaration and Power of Attorney
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Application Data Sheet
- ☐ Request for Corrected Filing Receipt with Enclosures
- ☐ A self-addressed prepaid postcard for acknowledging receipt
- ■ Other Enclosure(s) *(please identify below)*:

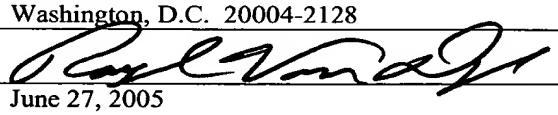
Copies of papers filed 3-9-05:

- **Renewed Petition Under 37 CFR 1.137(b)**
- **Reply Under 37 CFR 1.137(b)**

Remarks

☒ The Commissioner is hereby authorized to charge any additional fees required or credit any overpayments to Deposit Account No. 19-2380 for the above identified docket number.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Raymond Van Dyke, Registration No. 34,746 Nixon Peabody LLP 401 9th Street, N.W. Suite 900 Washington, D.C. 20004-2128
Signature	
Date	June 27, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	
Fang LAI *et al.*	)	Group Art Unit: 1631
Serial No.: 09/972,469	)	Examiner: Carolyn L. SMITH
Filed: October 5, 2001	)	Confirmation No: 4187
For: Amplifying Expressed Sequences from Genomic DNA of Higher-Order Eukaryotic Organisms for DNA Arrays	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO OFFICIAL COMMUNICATION CONCERNING NON-RESPONSIVE RESPONSE

Sir:

In response to the Office Communication mailed June 15, 2005, Applicants submit herewith clean copies of Renewed Petition Under 37 C.F.R. §1.137(b) and Reply Under 37 C.F.R. §1.137(b)(1), as filed March 9, 2005, in connection with the above-identified application. Applicants also respectfully point out that clean copies of the above-mentioned documents were sent to the Examiner by facsimile on June 7, 2005.

Although Applicants believe that no fee is due, the Commissioner is hereby authorized to charge any payment deficiency to deposit account number 19-2380 referring to attorney docket number 015275-060008. Should the Examiner have any questions, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

Date: June 27, 2005

Raymond Van Dyke
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)
Fang LAI *et al.*	) Group Art Unit: 1631
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Mail Stop **PETITIONS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RENEWED PETITION UNDER 37 C.F.R. §1.137(b)

Sir:

In response to the Office decision to dismiss Applicants' petition for revival of the above-identified application, Applicants submit herewith a reply to the non-final Office Action mailed May 3, 2004. Applicants believe that the reply, together with the Petition for Revival filed January 19, 2005, satisfy the requirements under 37 C.F.R. §1.137(b). Accordingly, Applicants respectfully request reconsideration and withdrawal of the Office dismissal of Applicants' petition. Revival of the above-identified application is respectfully requested.

Although Applicants believe that no fee is due, the Commissioner is hereby authorized to charge any payment deficiency to deposit account number 19-2380 referring to attorney docket number 015275-060008.

Respectfully submitted,

Date: March 9 2005

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In re Patent Application of:	)	
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CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (703) 872-9306.

03/09/05
Date

Shoshone Abdulkariem

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Commissioner for Patents
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Alexandria, VA 22313-1450

REPLY UNDER 37 C.F.R. §1.137(b)(1)

Sir:

In response to the Office Action mailed May 3, 2004, and the Office decision to dismiss Applicants' petition to revive the above-identified application, Applicants respectfully request reconsideration of the application in view of the following amendments and remarks.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (currently amended) A method for amplifying expressed genetic sequences from genomic DNA (gDNA) [[gDNA]] selected from a higher-order eukaryotic species, for printing on DNA microarrays, wherein the method comprises:

identifying a 3' untranslated region (3'UTR) ~~either 1) a 3'UTR~~ of a gDNA sequence based on the presence of a stop codon and a polyadenylation signal in the gDNA sequence ~~corresponding to an expressed mRNA sequence, or 2) an exon of a gene defined by computer software~~;

selecting a predetermined gDNA sequence within the 3'UTR ~~or exon~~;

designing a probe for said predetermined gDNA sequence;

performing a first polymerase chain reaction (PCR) for the 3'UTR ~~or exon~~ on gDNA to generate PCR-product;

separating the resultant PCR-product by a size-differentiation process selected from the group consisting of electrophoresis and chromatography;

selecting a predetermined band from the size-differentiated samples; [[and]]

performing a second polymerase chain reaction to amplify a PCR product in the predetermined band ~~predetermined sequence~~; and

depositing a sequence amplified by said second polymerase chain reaction to a substrate of an array.

2. (currently amended) The method according to claim 1, wherein a plurality of said ~~final~~ amplified sequences are deposited on a substrate in an array.

3. (currently amended) The method according to claim 1, wherein said amplified sequence is ~~final amplified sequences are~~ the sequence of one exon and contains no polyadenosine.

4. (currently amended) The method according to claim 1, wherein said predetermined gDNA sequence within the 3'UTR ~~or exon~~ is selected by use of computer software.

5. (currently amended) The method according to claim 1, wherein said selected predetermined gDNA sequence within the 3'UTR ~~or exon~~ has a length of at least about 75 nucleotides.

6. (original) The method according to claim 5, wherein said selected predetermined gDNA sequence has a length of about 200 to about 600 bases.

7. (original) The method according to claim 6, wherein said selected predetermined gDNA sequence has a length of about 250 to about 450 bases.

8. (original) The method according to claim 1, wherein said selected predetermined gDNA sequence has an overall homology of less than or equal to about 70% to any other genomic sequence in the same genome.

9. (original) The method according to claim 8, wherein said selected predetermined gDNA sequence has an overall homology of less than or equal to about 40% to any other genomic sequence in the same genome.

10. (original) The method according to claim 8, wherein said selected predetermined gDNA sequence has an overall homology of from about 20% to 30% to any other genomic sequence in the same genome.

11. (currently amended) The method according to claim 1, wherein ~~said method can generate PCR products that contain~~ said amplified sequence contains over 90 percent correct predetermined sequence.

12. (currently amended) The method according to claim 1, wherein said array has [[is]] a rectilinear format.

13-26. (canceled)

27. (currently amended) The method according to claim 1, wherein said predetermined gDNA sequence within the 3'UTR ~~or exon~~ has a length of up to about 2000 nucleotides.

28. (new) A method for amplifying expressed genetic sequences from genomic DNA (gDNA) selected from a higher-order eukaryotic species, for printing on DNA microarrays, wherein the method comprises:

identifying an exon of a gene defined by computer software;

selecting a predetermined gDNA sequence within the exon;

designing a probe for said predetermined gDNA sequence;

performing a first polymerase chain reaction (PCR) for the exon on gDNA to generate PCR-product;

separating the resultant PCR-product by a size-differentiation process selected from the group consisting of electrophoresis and chromatography;

selecting a predetermined band from the size-differentiated samples;

performing a second PCR to amplify a product in the predetermined band; and

depositing a sequence amplified by said second PCR to a substrate of an array.

29. (new) A method for making a DNA array, comprising:

performing a first PCR to amplify a 3'UTR, or a segment thereof, in a gDNA of a higher-order eukaryotic species;

separating products of said first PCR to select a product with a predetermined size;

performing a second PCR to amplify a sequence in said selected product; and

depositing said amplified sequence to a substrate of the DNA array.

30. (new) The method of claim 29, comprising:

performing PCRs to amply a plurality of 3'UTRs, or segments thereof, in genomic DNAs of said higher-order eukaryotic species;

separating products of said PCRs to select products with predetermined sizes;

performing PCRs to amplify sequences in said selected products; and

depositing said amplified sequences to the DNA array.

31. (new) The method of claim 30, wherein each said 3'UTR is located between a stop codon and a polyadenylation signal of a different respective gene.

32. (new) The method of claim 31, wherein each said 3'UTR or segment comprises from about 75 to about 2,000 nucleotides, and each said separating step is accomplished by electrophoresis or chromatography.

33. (new) The method of claim 31, wherein said higher-order eukaryotic species is a mammal, and each said 3'UTR or segment has an overall homology of no more than about 40% to any other genomic sequence in the genome of said mammal.

34. (new) The method of claim 29, wherein said first and second PCRs are performed using the same pair of primers.

REMARKS

Claims 1-12 and 27 are pending, and new claims 28-34 have been added. By this amendment, claims 13-26 have been canceled without prejudice or disclaimer. Applicants reserve the right to pursue these canceled claims in a continuation or divisional application.

Applicants have amended claim 1 to replace the terms "gDNA," "3'UTR," and "predetermined sequence" with "genomic DNA (gDNA)," "3' untranslated region (3'UTR)," and "a PCR product in the predetermined band," respectively. Applicants have also deleted the term "exon" from claim 1, and added new claim 28 to prescribe methods for amplifying genomic sequences from "an exon of a gene defined by computer software." Applicants believe that the above amendment to claim 1 are purely cosmetic and, therefore, do not introduce new matter. Applicants have further amended claim 1 to recite "depositing a sequence amplified by said second polymerase chain reaction to a substrate of an array." This amendment is supported at least by original claim 2 and paragraph 36 of the specification.

In addition, Applicants have amended claim 2 to delete the term "final," claim 3 to replace the phrase "final amplified sequences are" with "amplified sequence is," claims 4-5 and 27 to delete the term "or exon," claim 11 to replace the phrase "said method can generate PCR products that contain" with "said amplified sequence contains," and claim 12 to replace the term "is" with "has." Applicants believe that these amendments to claims 2-5, 11-12 and 27 are purely cosmetic and, therefore, do not introduce new matter.

Moreover, Applicants have added new claims 28-34. Claim 28 is supported at least by original claim 1, and claims 29-34 are supported at least by paragraphs 31-43 of the specification.

Applicants respectfully submit that the amendments to the claims and the addition of new claims do not introduce new matter. Accordingly, entry of the amendments is respectfully requested.

Claim Objection

On page 2, the Office Action objects claim 3 for reciting "sequences are the sequence." Applicants have amended claim 3 to replace the phrase "final amplified sequences are" with "amplified sequence is." Applicants believe that this amendment overcomes the Examiner's objection. Reconsideration of the objection to claim 3 is, therefore, respectfully requested.

Claim Rejection Under 35 U.S.C. §112, Second Paragraph

On page 3, the Office Action rejects claims 1-12 and 27 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. In particularly, the Office Action rejects claim 1, 4-10, and 27 for reciting the terms "UTR" and "gDNA," and claims 2-3 and 11-12 for depending from claim 1. The Office Action

also rejects claim 1 for reciting the phrase "corresponding to," and claims 2-12 and 27 for depending from claim 1. For the reasons set forth below, Applicants respectfully traverse the rejection.

Applicants have amended claim 1 to recite "genomic DNA (gDNA)" and "3' untranslated region (3' UTR)." In addition, Applicants have deleted the phrase "corresponding to" from claim 1. Applicants submit that these amendments obviate the Examiner's rejection of claims 1-12 and 27. Reconsideration of the §112 rejection of these claims is, therefore, respectfully requested.

Claim Rejection Under 35 U.S.C. §102(a)

On pages 3-5, the Office Action rejects claims 1-2, 5-10, 12, and 27 under 35 U.S.C. §102(a) as allegedly being anticipated by U.S. Patent No. 6,274,332 (hereinafter "Keating"). Applicants respectfully traverse the rejection.

Applicants respectfully submit that Keating fails to teach or suggest each and every element of claim 1. Keating describes PCR amplification of genomic sequences for the detection of mutations. Keating, however, neither teaches nor suggests amplifying genomic sequences from the 3'UTR regions. Moreover, Keating fails to teach or suggest depositing the amplified sequences to a substrate to make DNA arrays. Accordingly, Applicants respectfully submit that Keating fails to teach or suggest each and every element of claim 1.

Because claims 2-12 and 27 depend from claim 1, Applicants submit that Keating also fails to teach or suggest each and every element of these claims. Based on the above reasons, Applicants respectfully request reconsideration and withdrawal of the §102(a) rejection of claims 1-12 and 27.

In regard to new claim 28, Applicants believe that Keating fails to teach or suggest using computer software to determine exons in a genomic sequence. In addition, as noted above, Keating neither teaches nor suggests depositing amplified genomic sequences to a substrate to make DNA arrays. As a result, Applicants respectfully submit that Keating neither anticipates nor renders obvious claim 28.

CONCLUSION

For at least the reasons set forth above, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance of the claims are earnestly solicited. Although Applicants believe that no fee is due, the Commissioner is hereby authorized to charge any payment deficiency to deposit account number 19-2380 referring to attorney docket number 015275-060008.

Should the Examiner believe that anything further is desired in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

Date: March 9 2005

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